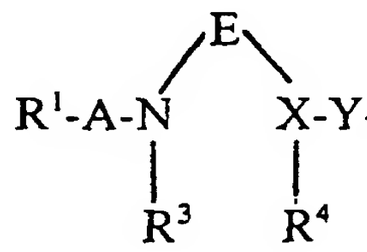
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Currently Amended) A compound of the formula:



(I)

wherein R^1 is acyl;

R^2 is lower alkyl, lower alkoxy, lower alkylamino, lower alkenyl, lower alkenyloxy, lower alkenylamino, lower alkynyl, lower alkynyloxy, lower alkynylamino, cyclo (lower)alkyl, cyclo(lower)alkyloxy, cyclo(lower)alkylamino, aryl, aryloxy, arylamino, a heterocyclic group or amino substituted with a heterocyclic group, each of which may be substituted with ~~suitable~~ a substituents(s); or acyl;

A is a single bond, -CO- or -SO_2-,

E is lower alkylene optionally substituted with ~~suitable~~ substituent(s),

X is CH or N,

Y is a single bond, lower alkylene or -NR^5- (wherein R^5 is hydrogen, lower alkyl, substituted-lower alkyl, an N-protective group, aryl, acyl or a heterocyclic group),

Q is -CH_2-, -CO-, -SO_2- or -N=CH-, and

R^3 and R^4 are each hydrogen or lower alkyl, or ~~are~~ taken together are lower alkylene ~~to form~~ thereby forming a ring optionally condensed with a cyclic hydrocarbon or a

heterocyclic ring, provided that when X is N, then 1) Y is a single bond, and Q is -CH_2-, -CO- or -SO_2-, or (2) Y is lower alkylene, and a pharmaceutically acceptable salt thereof; with the proviso that simultaneously A is not a single bond, E is not ethylene, X is not -CH-, Y is not -NH-, Q is not -CO- or SO_2- and R^3 and R^4 together are not ethylene.

Claim 2. (Currently Amended) ~~A~~ The compound according to Claim 1, wherein

R^2 is aryl, aryloxy or arylamino, each aryl of which may be substituted with haolgen; pyridyl; or pyridylamino;

A is a single bond,

E is ethylene,

X is ~~CH or~~ N,

Y is a single bond, lower alkylene or -NR^5- (wherein R^5 is hydrogen, lower alkyl or an N-protective group),

Q is -CH_2-, -CO-, or -SO_2-, and

R^3 and R^4 ~~are~~ taken together ~~to~~ form ethylene.

Claim 3. (Currently Amended) ~~A~~ The compound according to Claim 2, wherein

R^1 is lower alkanoyl, esterified carboxy, substituted or unsubstituted aroyl, lower alkylsulfonyl, substituted or unsubstituted arylsulfonyl, or cyclo(lower)alkylcarbonyl, and

R^2 is aryl or arylamino, each aryl of which may be substituted with halogen.

Claim 4. (Currently Amended) ~~A~~ The compound according to Claim 3, wherein

R^1 is lower alkanoyl, lower alkoxycarbonyl, aroyl, aroyl substituted with halo(lower)alkoxy, lower alkylsulfonyl, arylsulfonyl, arylsulfonyl substituted with halogen, or cyclo(lower)alkylcarbonyl,

X is -CH-,

Y is a single bond ~~or -NH-~~, and

Q is -CO- or $-SO_2-$.

Claim 5. (Currently Amended) ~~A~~ The compound according to Claim 3, wherein

R^1 is lower alkanoyl, lower alkoxycarbonyl, aroyl, aroyl substituted with halo(lower)alkoxy, lower alkylsulfonyl, arylsulfonyl, arylsulfonyl substituted with halogen, or cyclo(lower)alkylcarbonyl,

X is -N-,

Y is a single bond or lower alkylene, and

Q is -CO- or $-SO_2-$.

Claim 6. (Canceled) ~~A~~ The compound according to Claim 4, wherein

R^1 is lower alkanoyl, lower alkoxycarbonyl, aroyl, aroyl substituted with halo(lower)alkoxy, lower alkylsulfonyl, arylsulfonyl, arylsulfonyl substituted with halogen, or cyclo(lower)alkylcarbonyl,

X is -N-,

Y is a single bond or lower alkylene, and

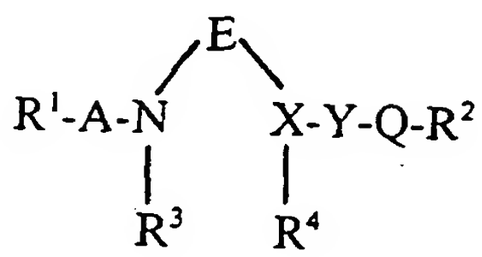
Q is -CO- or $-SO_2-$.

Claim 7. (Currently Amended) ~~A~~ The compound according to Claim 5, wherein

Y is a single bond, and

Q is -CO-.

Claim 8. (Currently Amended) A process for preparing a compound of the formula:



(I)

wherein R^1 is acyl,

R^2 is lower alkyl, lower alkoxy, lower alkylamino, lower alkenyl, lower alkenyloxy, lower alkenylamino, lower alkynyl, lower alkynyloxy, lower alkynylamino, cyclo (lower)alkyl, cyclo(lower)alkyloxy, cyclo(lower)alkylamino, aryl, aryloxy, arylamino, a heterocyclic group or amino substituted with a heterocyclic group, each of which may be substituted with ~~suitable~~ a substituents(s); or acyl;

A is a single bond, -CO- or -SO_2-,

E is lower alkylene optionally substituted with ~~suitable~~ substituent(s),

X is CH or N,

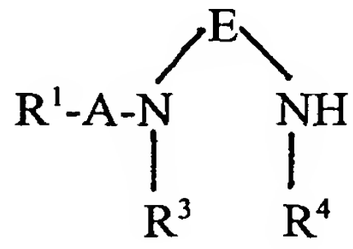
Y is a single bond, lower alkylene or -NR^5- (wherein R^5 is hydrogen, lower alkyl, substituted-lower alkyl, an N-protective group, aryl, acyl or a heterocyclic group),

Q is -CH_2-, -CO-, -SO_2- or -N=CH-, and

R^3 and R^4 are each hydrogen or lower alkyl, or ~~are~~ taken together are lower alkylene ~~to form~~ thereby forming a ring optionally condensed with a cyclic hydrocarbon or a heterocyclic ring, provided that when X is N, then 1) Y is a single bond, and Q is -CH_2-, -CO- or -SO_2-, or (2) Y is lower alkylene, or a pharmaceutically acceptable salt thereof; with the

proviso that simultaneously A is not a single bond, E is not ethylene, X is not -CH-, Y is not -NH-, Q is not -CO- or SO_2- and R^3 and R^4 together are not ethylene, which comprises; :

1) reacting a compound of the formula:

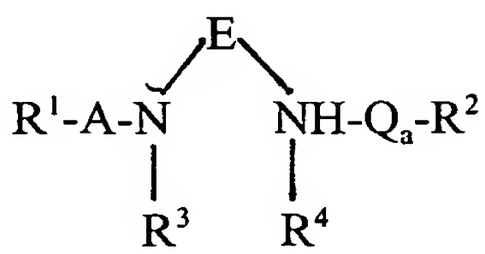


(II)

or its salt with a compound of the formula:

$$HO\text{-}Q_a\text{-}R^2 \qquad \text{(III)}$$

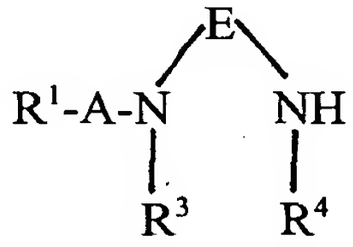
or its reactive derivative at the carboxy or sulfo group, or a salt thereof to provide a compound of the formula:



(Ia)

or its salt, in the above formulas, R^1, R^2, R^3, R^4, A and E are each as defined above, and Q_a is -CO- or -SO_2-.

(2) reacting a compound of the formula:

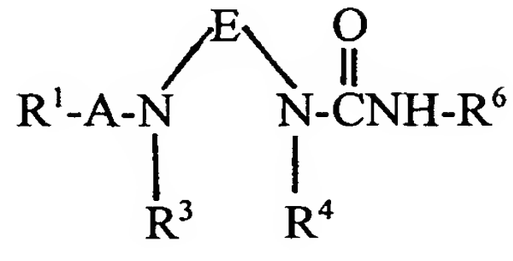


(II)

or its salt with a compound of the formula:

$$R^6\text{-}NCO \qquad (IV)$$

to provide a compound of the formula:

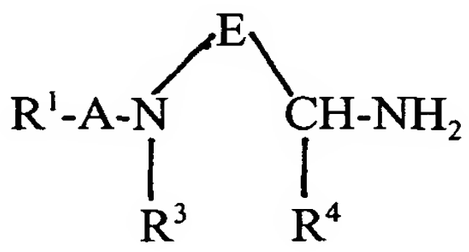


(Ib)

or its salt, wherein, in the above formulas, R^1, R^3, R^4, A and E are each as defined above, and R^6 is aryl which may be substituted with ~~suitable~~ substituent(s); or pyridyl,

or

(3) reacting a compound of the formula:

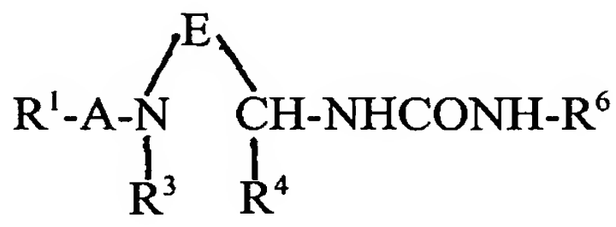


(V)

or its salt with a compound of the formula:

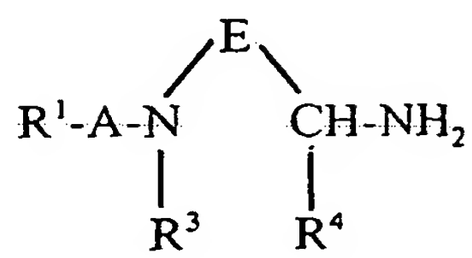
$$HO\text{-}Q_a\text{-}R^2 \qquad (III)$$

or its reactive derivative at the carboxy or sulfo group, or a salt thereof to provide a compound of the formula:



(Id)

4) reacting a compound of the formula:

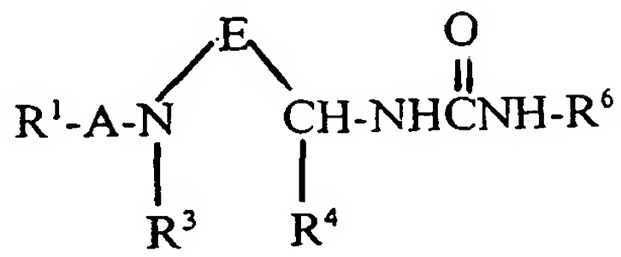


(V)

or its salt with a compound of the formula:

$$R^6\,NCO \qquad (IV)$$

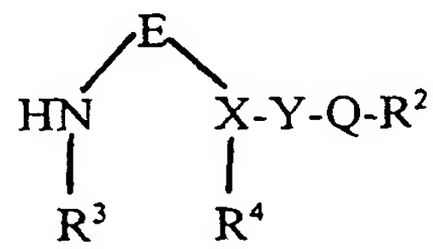
to provide a compound of the formula:



(Id)

or its salt, in the above formulas, R^1, R^3, R^4, R^6, A and E are each as defined above, or

5) reacting a compound of the formula:



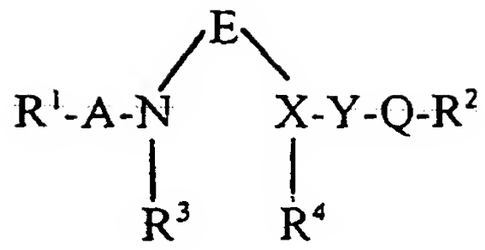
(VI)

or its salt with a compound of the formula:

$$R^1\text{-A-OH} \qquad (VII)$$

or its reactive derivative at the carboxy or sulfo group, or a salt thereof to provide a

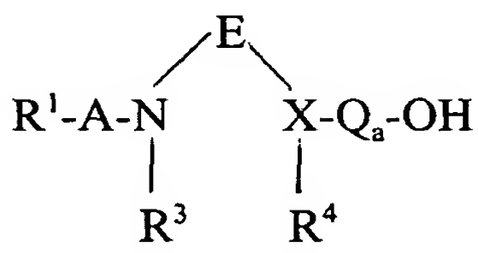
compound of the formula:



(I)

or its salt, in the above formulas, R^1, R^2, R^3, R^4, A, E, X, Y and Q are each as defined above, or

6) reacting a compound of the formula:

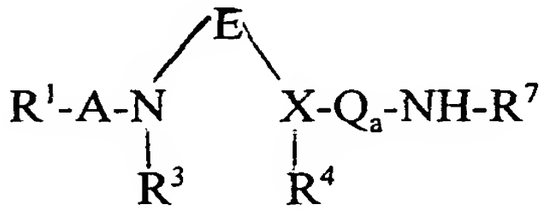


(VIII)

or its reactive derivatives at the carboxy or sulfo group, or a salt thereof with a compound of the formula:

(IX)

or its salt to provide a compound of the formula:

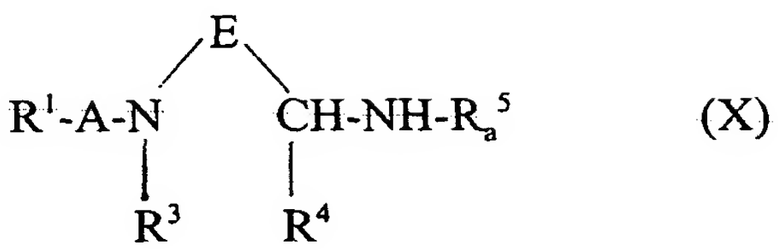


(Ie)

or its salt, in the above formulas, R^1, R^3, R^4, A, E, X and Q_a are each as defined above, and

R^7 is lower alkyl, lower alkenyl, lower alkynyl, cyclo(lower)alkyl, aryl, or a heterocyclic group, each of which may be substituted with ~~suitable~~ a substituents(s), or

7) reacting a compound of the formula:

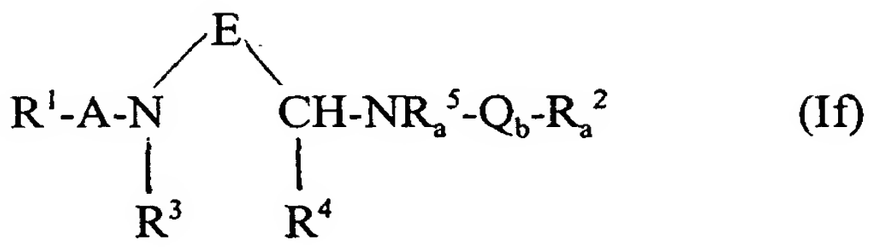


(X)

or its salt with a compound of the formula:

(XI)

to provide a compound of the formula:



(If)

or its salt, in the above formulas, R^1, R^3, R^4, A and E are each as defined above,

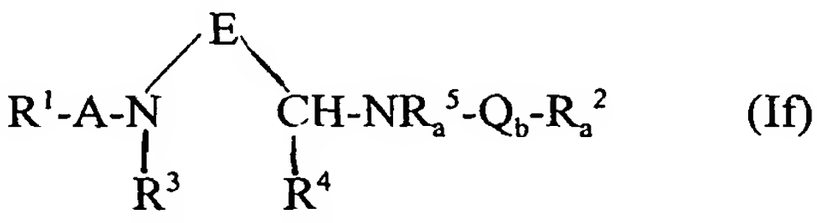
R_a^5 is an N-protective group,

R_a^2 is lower alkyl, lower alkenyl, lower alkynyl, cyclo(lower)alkyl, aryl, or a heterocyclic group, each of which may be substituted with ~~suitable~~ a substituents(s),

Q_b is $-CH_2-$, -CO-, $-SO_2-$, and

Z_a is an acid residue, or

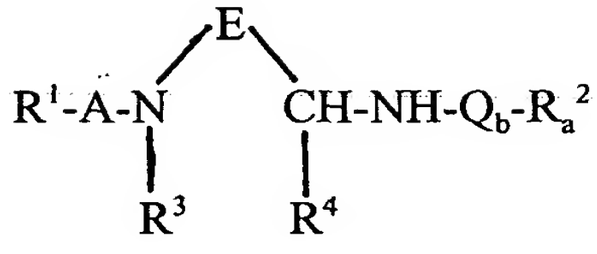
8) subjecting a compound of the formula:



(If)

or its salt to elimination ~~reaction~~ of the N-protective group to provide a compound of

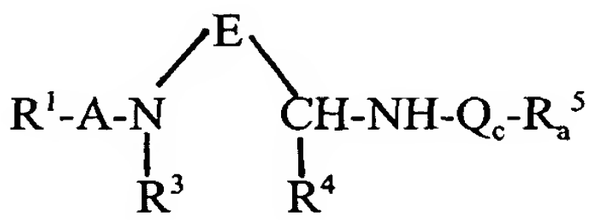
the formula:



(Ig)

or its salt, in the above formulas, R^1, R_a^2, R^3, R^4, A, E and Q_b, are each as defined above, or

9) reacting a compound of the formula:

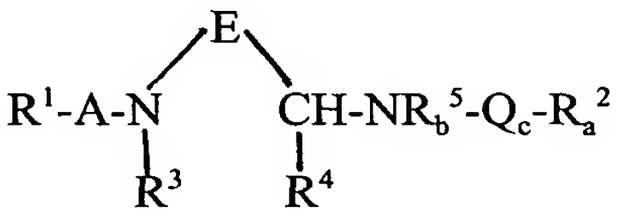


(Ih)

or its salt with a compound of the formula:

$$R_b^5\text{-}Z_b \qquad \text{(XII)}$$

to provide a compound of the formula:



(Ii)

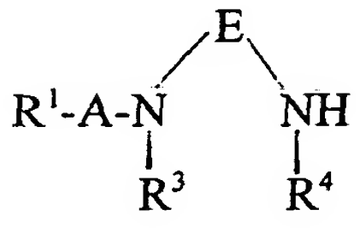
or its salt, in the above formulas, R^1, R_a^2, R^3, R^4, A and E are each as defined above,

Z_b is an acid residue,

Q_c is -CO-, and

R_b^5 is lower alkyl, or

10) reacting a compound of the formula:

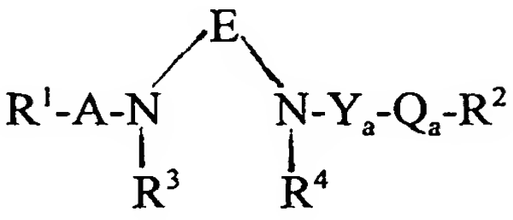


(II)

or its salt with a compound of the formula:

(XIII)

to provide a compound of the formula:



(Ij)

or its salt, in the above formulas, R^1, R^2, R^3, R^4, A, E and Q_a are each as defined above,

Z_c is an acid residue, and

R_b^5 is lower alkylene.

Claim 9. (Currently Amended) A pharmaceutical composition, comprising:

a compound of Claim 1, as an active ingredient, in association with a pharmaceutically acceptable, substantially non-toxic carrier or excipient.

Claim 10. (Canceled)

Claim 11. (Currently Amended) A method for the therapeutic treatment ~~and/or prevention~~ of amnesia, [or] dementia or schizophrenia, which comprises:

administering an effective amount of a compound of Claim 1 to mammals.

Appl. No. New Application

Claim 12. (Canceled)